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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/461,625	12/14/1999	JOHN I. GARNEY	2207/7562	4071

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KENYON & KENYON
333 W SAN CARLOS STREET
SUITE 600
SAN JOSE, CA 951102711

EXAMINER

DUONG, FRANK

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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05/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/461,625	Applicant(s) GARNEY ET AL.	
	Examiner Frank Duong	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-21, 23-31 and 33-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-21, 23-25, 33-35 and 42-44 is/are rejected.
- 7) ☒ Claim(s) 26-31 and 36-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Reopened Prosecution

1. In view of the appeal brief filed on 12/26/06, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

A handwritten signature in black ink, appearing to read 'Lynn D. Feild', with a stylized flourish at the end.

Lynn D. Feild
SPE AU 2616

DETAILED ACTION

2. This Office Action is a response to the communications dated 12/26/06. Claims 2-21, 23-31 and 33-44 are pending in the application.

Terminal Disclaimer

3. The terminal disclaimers filed on 12/26/06 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of patents 6,792,495 and 6,813,251 have been reviewed and are accepted. The terminal disclaimers have been recorded.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed elements of "a first hub controller" and "a second hub controller", recited in dependent claims 35-36, 38-41 and base claim 43, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 23-31, 33-41 and 43-44 are objected to because of the following informalities:

As per claim 23, line 2, the term "may be" should be changed to --are--.

As per claim 24, line 2, the term "may be" should be changed to --is--.

As per claim 25, line 2, the term "adapted to" should be changed to --configured to--.

As per claim 26, line 2, the term "adapted to" should be changed to --configured to--.

As per claim 27, line 1, the term "adapted to" should be changed to --configured to--.

As per claim 28, line 1, the term "may be" should be changed to --is--.

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As per claim 29, line 2, the term "adapted to" should be changed to --configured to--.

As per claim 30, line 1, the term "adapted to" should be changed to --configured to--.

As per claim 31, line 1, the term "may be" should be changed to --is--.

As per claim 33, line 2, the term "may be" should be changed to --are--.

As per claim 34, line 2, the term "may be" should be changed to --is--.

As per claim 35, line 2, the term "adapted to" should be changed to --configured to--.

As per claim 36, line 2, the term "adapted to" should be changed to --configured to--.

As per claim 37, line 1, the term "adapted to" should be changed to --configured to--.

As per claim 38, line 1, the term "may be" should be changed to --is--.

As per claim 39, line 2, the term "adapted to" should be changed to --configured to--.

As per claim 40, line 1, the term "adapted to" should be changed to --configured to--.

As per claim 41, line 1, the term "may be" should be changed to --is--.

As per claim 43, lines 3 and 6, the term "adapted to" should be changed to --configured to--.

As per claim 44, lines 2 and 5, the term "adapted to" should be changed to -- configured to--.

A typical reason for doing so is that such term or claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. See MPEP § 2111.049 [R.3].

Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. Claims 2-21 and 42 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the following rationales:

As per base claims 11, 16 and 42, the claims are rejected under 35 U.S.C. 101 because the claimed inventions are directed to non-statutory subject matter. Base claims 11, 16 and 42 are drawn to a computer implemented process that merely manipulates data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application in the technological arts.

In order for a claimed invention to accomplish a practical application, it must produce a "useful, concrete and tangible result" *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02 (see MPEP 2106.II.A). A practical application can be achieved through recitation of "a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan", or "limited to a practical application within

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the technological arts" (MPEP 2106 IVB2(b)). Currently, base claims 11, 16 and 42 meet neither of these criteria. In order to for the claimed process to produce a "useful, concrete and tangible" result, recitation of one or more of the following elements is suggested:

1. The manipulation of data that represents a physical object or activity transformed from outside the computer (MPEP 2106 IVB2(b)(i)).
2. A recitation of a physical transformations outside the computer, for example in the form of pre or post computer processing activity (MPEP 2106 IVB2(b)(i)).

Dependent claims 2-10, 12-15 and 17-21 fall with their respective parent claims 42, 11 and 16.

Claims 2-21 and 42 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 2-4, 23-25, 33-35 and 42-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Garney et al (USP 6,389,501) (hereinafter "Garney").

Regarding **claim 42**, in accordance with Garney reference entirety, Garney discloses a method (*Fig. 4 and the accompanied description at col. 6, line 4 to col. 7, line 12*) for communicating data between a host (410) and an agent (402 or 403), the method comprising:

performing a first transaction at a first time (*high speed*) between a host controller (406) and a hub (404), said first transaction initiated by said host controller (406) (*col. 6, lines 40-50, it is disclosed device driver 408 processes a number of the request packets destined for low speed bus agent 402 into a multi-packet package 422, and schedules the multi-packet package 422 for transmission by bus controller 406, in bulk, to low speed bus agent 402, by way of SF (store-and-forward) hub 104' hub to buffer*);

performing a second transaction (*low speed*) between the hub (404) and an agent (402) based on the first transaction at the first time (*col. 6, lines 50-53, it is disclosed SF hub 104', in turn, causes the request packets to be forwarded to low speed bus agent 402, on a packet-by-packet basis, using the slower communication speed*); and

repeating, by the host controller (406), the first transaction (*high speed*) at a second time between the host controller (406) and the hub (404) (*col. 6, lines 26-28, it is disclosed the invention does not have speed shifting between transactions. Therefore,*

should there be a need to communicate with a high speed agent, the following will happen. At col. 6, lines 36-40, it is disclosed device driver 408 simply schedules transactions 428 for bus controller 406 to transmit, and conventional high speed repeater hub logic 407 to repeat (without buffering) for high speed agent 403).

Regarding **claim 2**, in addition to features recited in base claim 42 (see rationales discussed above), Garney further discloses wherein the first transaction at the first time and the first transaction at the second time are performed at a first communication speed (high speed) or in accordance with a first protocol (*Fig. 4 depicts high speed communication is performed between host system 410 and hub 407 or hub 104 and it is also clearly disclosed at col. 6, lines 34-53*).

Regarding **claim 3**, in addition to features recited in base claim 42 (see rationales discussed above), Garney further discloses wherein the second transaction is performed at a second communication speed (low speed) or in accordance with a second protocol (*Fig. 4 depicts low speed communication is performed between hub 104' and agent 402 and it is also clearly disclosed at col. 6, lines 34-53*).

Regarding **claim 4**, in addition to features recited in base claim 42 (see rationales discussed above), Garney further discloses performing a third transaction between the first transaction at the first time and the first transaction at the second time (*col. 6, lines 38-39, it is disclosed the transactions 428 received at hub 407 is repeated to agent 403 without buffering*).

Regarding **claim 43**, in accordance with Garney reference entirety, Garney shows a digital system (Fig. 4) comprising:

a host controller (406);

a device driver (408) configured to operate the host controller (406) to initiate and perform a first transaction at a first time between the host controller (406) and a hub (404) (*col. 6, lines 40-53*) and to initiate and repeat (407) the first transaction at a second time between the host controller (406) and the hub (404) (*col. 6, lines 34-40*);

wherein the hub is configured to perform a second transaction with an agent (402) based upon the first transaction at the first time (*col. 6, lines 50-53, it is disclosed SF hub 104', in turn, causes the request packets to be forwarded to low speed bus agent 402, on a packet-by-packet basis, using the slower communication speed*); and

wherein the first transaction at the second time is repeated after the second transaction (*col. 6, lines 26-28, it is disclosed the invention does not have speed shifting between transactions. Therefore, should there be a need to communicate with a high speed agent. The following will happen. At col. 6, lines 36-40, it is disclosed device driver 408 simply schedules transactions 428 for bus controller 406 to transmit, and conventional high speed repeater hub logic 407 to repeat (without buffering) for high speed agent 403*).

Regarding **claim 23**, in addition to features recited in base claim 43 (see rationales discussed above), Garney further discloses wherein the first transaction at the first time and the first transaction at the second time are performed at a first communication speed (high speed) or in accordance with a first protocol (*Fig. 4 depicts high speed communication is performed between host system 410 and hub 407 or hub 104 and it is also clearly disclosed at col. 6, lines 34-53*).

Regarding **claim 24**, in addition to features recited in base claim 43 (see rationales discussed above), Garney further discloses wherein the second transaction is performed at a second communication speed (low speed) or in accordance with a second protocol (*Fig. 4 depicts low speed communication is performed between hub 104' and agent 402 and it is also clearly disclosed at col. 6, lines 34-53*).

Regarding **claim 25**, in addition to features recited in base claim 43 (see rationales discussed above), Garney further discloses wherein the host controller is configured to perform a third transaction between the first transaction at the first time and the first transaction at the second time (*col. 6, lines 38-39, it is disclosed the transactions 428 received at hub 407 is repeated to agent 403 without buffering. The reverse process between the hub and the controller is also held truth*).

Regarding **claim 44**, in accordance with Garney reference entirety, Garney shows a digital system (Fig. 4) comprising:

a first hub controller (407) configured to initiate and perform a first transaction (high speed transaction) at a first time with a host controller (406) and to initiate and perform the first transaction (high speed transaction) at a second time with the host controller (406) (*col. 6, lines 26-28, it is disclosed the invention does not have speed shifting between transactions. Therefore, should there be a need to communicate with a high speed agent, the following will happen. At col. 6, lines 36-40, it is disclosed device driver 408 simply schedules transactions 428 for bus controller 406 to transmit, and conventional high speed repeater hub logic 407 to repeat (without buffering) for high speed agent 403. The reverse communication process from the high speed agent*

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to high speed hub 407 to host controller is inherently held truth from the recited passage);

a second hub controller (104') coupled to the first hub controller (407) (see Fig. 4 for connection details) and configured to perform a second transaction (low speed transaction) with an agent (402) upon the first transaction at the first time (at col. 6, lines 40-53, Garney discloses the transaction between the host controller 406 and the low speed agent 402 comprising the packets from the host controller 106 are stored at a first hub controller 104' and forwarded to the low speed agent 402 by the first hub controller 104'. The reverse communication process from the low speed agent 402 to the first hub controller 104' to the host controller 406 is inherently held truth from the recited passage); and wherein the first transaction at the second time (high speed transaction) is performed after the second transaction (low speed transaction) (col. 6, lines 34-53).

Regarding **claim 33**, in addition to features recited in base claim 44 (see rationales discussed above), Garney further discloses wherein the first transaction at the first time and the first transaction at the second time are performed at a first communication speed (high speed) or in accordance with a first protocol (Fig. 4 depicts high speed communication is performed between host system 410 and hub 407 or hub 104 and it is also clearly disclosed at col. 6, lines 34-53).

Regarding **claim 34**, in addition to features recited in base claim 44 (see rationales discussed above), Garney further discloses wherein the second transaction is performed at a second communication speed (low speed) or in accordance with a

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second protocol (*Fig. 4 depicts low speed communication is performed between hub 104' and agent 402 and it is also clearly disclosed at col. 6, lines 34-53*).

Regarding **claim 35**, in addition to features recited in base claim 44 (see rationales discussed above), Garney further discloses wherein the host controller is configured to perform a third transaction between the first transaction at the first time and the first transaction at the second time (*col. 6, lines 38-39, it is disclosed the transactions 428 received at hub 407 is repeated to agent 403 without buffering. The reverse process between the hub and the controller is also held truth*).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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8. Claims 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garney in view of Wooten (USP 5,832,492).

Regarding **claims 11-21**, the claims call for a method similar to claims 42 and 44 with exception features of receiving at the host controller from the agent a request to perform the transactions, and generating a frame template and performing the transactions periodically in accordance with specific time periods. Garney, as discussed above regarding claims 42 and 44, teaches the method but fails to specifically disclose receiving at the host controller from the agent a request to perform the transactions, and generating a frame template and performing the transactions periodically in accordance with specific time periods.

In an analogous art, Wooten, like Garney, also teaches methods for USB communications (e.g., see col. 3, line 30 - col. 15, line 57). Specifically, Wooten teaches receiving at the host controller from the agent a request to perform the transactions (e.g., see col. 6, lines 17-21 regarding device-initiated communications), and generating a frame template and performing the transactions periodically in accordance with specific time periods (e.g., see col. 6, lines 5-9 regarding periodic communications). The teachings of Wooten provide a method for USB communications with reduced memory access and size requirements (e.g., see col. 3, lines 1-67).

Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to apply the USB communication teachings of Wooten to the USB communication teachings of Kim in order to provide USB communications with reduced memory access and size requirements.

Furthermore, it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value.

Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to configure frame templates according to various particular time periods, since it is generally considered to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value.

Allowable Subject Matter

9. Claims 26-31 and 36-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, considered individually or in combination, fails to fairly show or suggest the claimed invention of base claims 43 and 44 and further limit with novel and unobvious limitations of *"wherein the host controller is configured to send, during the first transaction at the first time, a first packet including agent identification information and a transfer indicator indicating that data needs to be transferred between the host controller and the hub, and to transfer, during the first transaction at the first time, a data packet between the host controller and the hub,"* structurally and functionally

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interconnected with other limitations in a manner as recited in the dependent claims 26-31 and 36-41.

Conclusion

10. The prior/related art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mamata (USP 6,067,589).

Shakkarwar (USP 5,933,611).

McAlear (USP 6,389,029).

Universal Serial Bus Specification Revision 2.0 (0.79), pages 229-317,
downloadable from the Internet, no date established at this time.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



FRANK DUONG
PRIMARY EXAMINER

April 28, 2007